Accessible Playground Toolkit

Ideas and information to help Indiana communities create accessible playgrounds for all users

IDNR Division of Outdoor Recreation
Spring 2010

Acknowledgements:

For Questions or Comments, Contact:

Indiana Dept. of Natural Resources (IDNR)
Division of Outdoor Recreation
State and Community Planning Section
Greg Beilfuss, State and Community Outdoor Recreation Planner
402 W. Washington St., Rm W271
Indianapolis, IN 46204-2782
Phone: (317) 232-4071
Fax: (317) 233-4648
gbeilfuss@dnr.in.gov

TABLE OF CONTENTS:

Introduction

According to the 2002 U.S. Census, almost one out of every five Americans has a disability. Meeting the needs of this portion of the public is a complex but important goal for any public park system. In the last ten years great strides have been made to create more "inclusive" play opportunities for children with disabilities. "Inclusion is the philosophy that all people have the right to be included with their peers in age-appropriate activities throughout life." (Miller and Schleien, 2006). Communities across the state of Indiana have built beautiful new playgrounds that also offer much greater safety and accessibility than the 'galvanized steel pipe over hard-packed earth' playgrounds of old. The IDNR Division of Outdoor Recreation recognizes that many of the remaining communities across the state would still like to upgrade or replace their old playgrounds with new facilities that would offer valuable play opportunities for all children.

This paper is designed to provide some tools, insight and ideas to prepare communities to undertake creating their own accessible playgrounds. The idea is to provide a starting point for those who are beginning their efforts. The paper will discuss items like accessibility standards and laws, public input, design, accessible surfacing, Universal Design, financing, life cycle costing, maintenance, and more. Many sources of more detailed information are provided; see the Bibliography for a complete alphabetical list of references.

The information provided here is an attempt to share some common themes and methods of providing better access to playgrounds for users of all abilities. It is not in any way an advertisement or recommendation for any given product, service, or vendor. This idea sheet is not all-inclusive; please seek whatever outside expert help you need to fill in the fine details needed to finish your specific project.

DISCLAIMER:
This document provides information and ideas to assist local park and recreation boards, planners, and interested individuals in understanding accessibility and universal design issues related to public playgrounds. The following information is provided for information and idea generation purposes only. This informational assistance does not constitute legal advice. Legal advice should be obtained from an attorney. Accessibility recommendations specific to your local community should be obtained from trained professionals in accessibility, landscape design, outdoor play equipment, etc.

 We hope that communities modify this data to suit their own unique opportunities and challenges in location, level of use, cost to install, cost to maintain, availability of labor/volunteers to build or maintain the playground, and other issues. Keep in mind that every child is unique, regardless of ability. Not every piece of play equipment needs to be accessible to every child; but access to socialization in the play space is vital.

Accessibility versus Universal Design: Just how accessible is accessible?

Now here's a tough decision: do you design your playground to meet only the minimum accessibility requirements developed by the U.S. Access Board (http://www.access-board.gov/ada-aba/), or do you design it to be accessible to the greatest possible number of users? State and local governments (including local park departments), fall under Title II of the Americans with Disabilities Act of 1990 (as amended). [See http://www.access-board.gov/adaag/ADAAG.pdf for the entire revised ADAAG standards] There is a significant difference between the two approaches. One does not have to cost a great deal more than the other, and the advantage to Universal Design is that it normally meets and exceeds ADA access requirements. The following is an excerpt from the IDNR 2006-2010 Statewide Comprehensive Outdoor Recreation Plan (SCORP):

"Universal Design (UD) is a design theory with seven principles. It is simply a different way of designing things so they can be used by everyone. The Americans with Disabilities Act (ADA) requires that new construction or alterations are accessible to people with disabilities. The difference between the

two approaches is minimum accessibility versus inclusion. ADA requires at least minimum accessibility, while Universal Design intends to make a facility appealing and usable to all people, regardless of ability or circumstances. A common application of the ADA accessibility guidelines is for a public building to add a wheelchair ramp next to a set of entry stairs, along with one door that opens when a button is pressed. Universal Design takes that idea one step further and would 'design in' an entrance that uses a gently sloped entry with no stairs, and a set of wide, automated doors that use sensors to open when anyone approaches. The Universal Design entrance that was just described could be used just as easily by someone who uses a wheelchair, was blind, or was deaf. Implementing Universal Design can be as simple and inexpensive as changing your standard light switches over to large rocker switches for easier use by those who find it hard to manipulate a standard switch." (Indiana SCORP, 2006; pg. 89)

A Note on Universal Design from the INDNR-OR Staff
The Universal Design section of this document is simply a suggestion for future design of park construction or rehabilitation. ADA compliance is a federal legal requirement, UD is not. Please consider the use of UD to enhance ADA compliance as a 'best management practice', and design your parks accordingly.

The following are some comparisons between accessible equipment as defined by the revised Americans with Disabilities Act Accessibility Guidelines and commonly available "Universally Designed" equipment:

Route to equipment
- Revised ADAAG: At least one accessible route into the playground area
- UD: Entire border of playground is level to surrounding ground, and the playground surface is firm, nearly level, and stable (meets ASTM F1951)

Access onto equipment
- Revised ADAAG: One transfer platform and adjacent transfer steps/grab bars for each major piece of equipment
- UD: Ramp onto each major piece of equipment

Height to which a person can go on equipment
- Revised ADAAG: Access is given via ramp or transfer platform to first level/second level of multi-level composite play structure

- UD: Ramp system is built into surrounding landscape that allows access to each level of the structure, including the highest accessible elevated components along the route

  Providing various types of access

- Revised ADAAG: Physical access is the primary consideration on your playground

- UD: Goes beyond improving physical access to providing features that facilitate use by children and adults with cognitive, developmental and sensory disabilities (such as: signs that use icons instead of words; Braille strips on signs/equipment; features that play music, speak out loud, vibrate, or rattle when moved or play audible messages, etc.)

Contact the Center for Universal Design at North Carolina State University for current literature describing universal design concepts and methods:

The Center for Universal Design
College of Design, North Carolina State University, Campus Box 8613
Raleigh, NC 27695-8613
(919) 515-3082
Fax: (919) 515-8951
Info Line: (800) 647-6777 http://design.ncsu.edu/cud/

Here's a link to the U.S. Access Board's Americans with Disabilities Act Accessibility Guidelines (ADAAG), and their subparts concerning play areas:

http://www.access-board.gov/adaag/html/adaag.htm

Subsection for play areas:

http://www.access-board.gov/adaag/html/adaag.htm#15.6%20Play%20Areas

Subsection for outdoor developed areas:

http://www.access-board.gov/outdoor/nprm.pdf

Who benefits from an accessible playground?

Creating an accessible playground doesn't only benefit children. Accessible playgrounds (and especially universally-designed playgrounds) offer improved play participation opportunities for parents, relatives and caregivers who themselves may have a disability. Other people benefit from accessible playgrounds as well. People that have temporary conditions such as broken bones, eye surgeries, or even advanced pregnancy may find it easier to get to and utilize an accessible playground with their children. Senior citizens who experience stiffness and limited range of motion due to arthritis have an easier time participating at an accessible playground with their children and grandchildren. A universally-designed elevated composite play structure would allow a parent or caregiver with a disability to directly access even the highest points on the structure. Before you begin selection and purchase of equipment and materials for your playground, there are a number of issues that should be carefully considered and planned for.

What to do first? Public participation and needs assessment

As with any new major construction project, the first place to start is with the community. Odds are that your community has already created a parks and recreation master plan that included a public input process; this is a very good baseline of information. For a construction project as potentially expensive yet narrow in focus as a playground, it is a good idea to seek more public input. This helps ensure that the community knows about your upcoming project and has shared their ideas, opinions and needs with you before you begin. Most system-wide master plans do not include the kind of in-depth public input discussion that is very important for a specific new playground project.

Hands-on methods of obtaining public input will probably work best. Face-to-face interviews with small groups of playground stakeholders, community agency

leaders, and interested persons should yield positive results. Make sure that you include people with disabilities in your public input process; their experience in dealing with the inherent accessibility limitations in many park settings can be invaluable to you as you design your new site. Children with disabilities are also going to be a very valuable source of opinion and information about their most desired playground features.

Public input can help decide critical questions and issues such as:
- Site: Where's the best/most user-convenient location? Why?
- Design: How much room is there to place equipment in the playground? Would users prefer segregated age-appropriate play areas? Would they prefer shade, restrooms and seating nearby? Should this playground be near the sports areas, or by itself?
- Desired Equipment: What types of features do users want in the playground? Consider all the new equipment varieties for climbing, swinging, spinning, bouncing, interactive play, solitary play, interactive panels, etc.
- Funding: How do users prefer that it be funded? Who's willing to help pay for it? Donations? Volunteers for fundraising, design, construction, etc.? Sponsors? Cooperating partners? Don't be afraid to ask for their financial/volunteer commitment
- Ensure public buy-in from the start; include parents, grandparents, daycare owners, and others who care for children; especially those with temporary or permanent disabilities

As always, public participation is a two-way street for information; this is the park department's opportunity to create public buy-in from the start, and ensure that the community understands why the playground is important and needed. Keeping the process of creating this playground highly visible to the community and as transparent as possible will help the community recognize the value of this specific project, and provide a venue for them to share their concerns and needs.

Another benefit of public input is the opportunity to directly involve the public in creation of the playground via their participation in committees (fundraising, equipment and design, etc.) that can share direct input with the park staff coordinating the project. These committees are another critical opportunity to involve users with disabilities and advocates.

Help?   See the appendices for a copy of page 23 of the 2007 IDNR Planning Guidelines for 5-Year Parks and Recreation Master Plans for more details on public participation.

How do we pay for it? Dealing with the expense

Cost Estimating

In "Recommendations for Child Care Centers" by Gary T. Moore, Carol G. Lane, Ann B. Hill, Uriel Cohen, and Tim McGinty (1994), there's a very helpful playground cost estimation formula that should give planners a reasonable ballpark cost figure. We have modified the formulas below to better reflect the changes in costs from the publication of the Moore text to now, and to illustrate the cost differences between two of the more popular 'accessible' playground surfaces. Many thanks to Steve McDaniel of Fort Wayne Parks and Recreation for providing a real-world basis for these 2008 cost estimation examples!

Formula A: Cost of playground equipment (x) + Cost of installation (.30x) + Cost of surfacing [Woodcarpet or Fibar] (.12x) + Cost of design fees, grading, landscaping, and other expenses (.10x) = Total project cost or budget

Formula B: Cost of playground equipment (x) + Cost of installation (.30x) + Cost of surfacing [Poured-In-Place-Rubber] (1.6x) + Cost of design fees, grading, landscaping, and other expenses (.10x) = Total project cost or budget

This formula can be adjusted for more conservative estimates by raising the values of the individual costs, such as changing the estimated cost of installation from (.30x) to (.50x). Experimenting with the various costs of playground equipment and other variables in this formula is very helpful in understanding just how much money must be raised in order to build the playground.

Funding Sources

There are many options for funding a new playground. Using the park department's capital budget as the sole means of paying for improvements in these days of shrinking budgets and program cuts is less of an option than ever. If your park department's capital budget can't handle the cost, consider one or more of the following options for funding the project:

- Corporate donations/sponsorships (especially corporations that have a vested interest in your community)
- Naming rights (For example: "Lucas Oil" Stadium; this can result in large donations from the right donor)
- Foundation/Philanthropic grants/donations (including your local Community Foundation)
- Park endowment (if you don't have one, ask your local Community Foundation how to begin)
- Bonds (Community-based; Serial, General Obligation, etc.) Work with your community's accounting staff to decide on the best option
- Donations/volunteerism/in-kind (and possible specific sources)
  NOTE: The term "in-kind" refers to the donation of goods or services instead of cash.
    - Service Clubs (Lions, Breakfast Optimist, Elks, Masons, Rotary, etc.)
    - Neighborhood-based groups (citizen groups, neighborhood watch groups, homeowner's associations)

- o Professional and business (landscape designers, architects, engineers, construction firms, banks, lumber companies, etc.)
  - o 'Friends of the Parks' groups
  - o Interested individuals (ask the park board/school board for people that might want to help; PTA; Scouting organizations; churches; etc.)
- Partner with other local groups involved with recreation, such as:
  - o Little league
  - o Boys and Girls Clubs
  - o YMCA/YWCA
  - o Adult sports leagues
- Private philanthropy (perhaps someone locally would love a big tax write-off)
- Membership program for the park department, and/or special programs offered by the department
- Gifts/bequests/commemoratives (create a 'wish list' of your desired donations for the community foundation or your endowment to discuss with potential donors and talk to your local Bar Association to inform attorneys who work with wills and estates for their clients)
- Fees and charges (never popular, but it's always an option)
- Special assessment taxes earmarked for park capital budget (never popular, but can be very effective)
- Merchandizing (not just t-shirts/hats; consider imprinted bricks, name plaques, bumper stickers, etc.)
- Zoning/Developer fees/Developer land requirements (require residential/commercial land developers to either provide dedicated open space and connectivity to adjacent park lands/trails, substitute land exchange, or the cash equivalent
- Grants (and who they're administered by):
  - o Land and Water Conservation Fund (IDNR-Division of Outdoor Rec.)

- o Community Development Block Grants (IN Office of Community and Rural Affairs)
- o Community Focus Fund Grants (IN Office of Community and Rural Affairs)
- o Access to Recreation (W.K. Kellogg Foundation – Michigan)

NOTE: Most grants require some kind of 'match'. Contact the grant administrator and ask about what options they'll accept to pay for the match (cash, "in-kind" or donation of goods or services, volunteer labor, land donation, other grants, etc.)

Help? See the appendices for a copy of Chapter 3 (page 35), of the IDNR Planning Guidelines for 5-Year Parks and Recreation Master Plans for more information.

Plan for maintenance and its cost

It is highly recommended that park departments take into account the costs of maintaining their new facilities once completed. It's smart to ask yourself: "If I build this, can I afford to take care of it, fix it when it breaks, and replace parts when they eventually wear out?" A growing trend among recreation professionals is using some variety of "life-cycle cost" estimation before a new facility is even built to ensure that their park system can truly afford to operate the new facility from design until removal. Life-cycle costing is estimating the actual cost of owning and operating a given facility from initial design until it is no longer cost-effective, and is removed and recycled. Once these costs are estimated, wise facility managers put back some funds before construction even takes place, to pay for the long-term costs of facility ownership.

Only considering the initial construction costs of a new facility creates the risk of having to make more room in maintenance and operation budgets for unanticipated maintenance and refurbishment costs, not to mention the cost of final demolition and disposal once the facility is no longer useful.

David Eager in his 2007 article: "Integrated Life-Cycle Management Applied to Playgrounds", discusses the design lifespan of a playground as being "generally estimated to be from 10 to 15 years". Mr. Eager goes on to state: "Playground management should begin at the definition and planning phases of the playground project. It should continue into the execution and delivery phases, and continue throughout the working life of the playground and finish when the playground is decommissioned and disposed." (Eager, 2007)

One simple method of estimating life-cycle maintenance costs is to calculate the yearly maintenance costs for one existing playground in the park system, and then add an additional percentage for the different equipment and surfacing needs of the accessible playground. Take the estimated cost plus the percentage, multiply it by the number of years that the facility is supposed to last and set it aside in a separate fund.

Formula: Estimated cost of one year's maintenance for an existing playground (x) + percentage increase for increased complexity/expense of materials in accessible playground (.30x) [Multiplied by] life expectancy of playground in years = Amount to set aside for future maintenance of the playground.

Another maintenance cost estimate option is to set aside 2% to 4% of the current replacement value (what it would cost in current dollars to completely replace that facility). Most grants will not allow set-asides for maintenance, but any money generated through donations, fundraising, etc. may be used for this purpose. The advantage of having a maintenance fund in place for your accessible playground is avoiding the use of the existing capital budget to pay for preventive, seasonal, or emergency maintenance over time.

Addressing Life-Cycle Maintenance Expenses

Many park and recreation agencies will simply accept the extra maintenance burden as an additional task to be absorbed into their regular maintenance

budget. If there is no responsible formal agency, the maintenance burden must be adopted or assigned.

Regardless of who is responsible for funding maintenance, it is prudent to know and to accept that there <u>will</u> be an additional maintenance burden resulting from the new construction and that this burden will last for the life of the facility. The first few years after construction "may" be nearly maintenance free, but eventually, there will be maintenance concerns. If the additional cost is absorbed without funding or support, the prospect of routine facility and site maintenance tasks being compromised becomes a real issue. Volunteer support or private funding can alleviate or eliminate the impact, <u>only if the support is reliable and consistent.</u> Keep in mind that an ounce of preventive maintenance is worth a pound of rehabilitation.

The following table illustrates two models of life-cycle costing
TABLE DIGEST:

1. The first model sets aside a fund amount (an endowment) expected to cover the cost of maintenance for the expected life of the project. At the end of that period all funds will be depleted.

2. The second model sets aside a calculated fund amount (an endowment) – where the earned interest from the fund is adequate to cover annual maintenance. A portion of the earned income is retained and reinvested to address projected annual increases (Cost Of Living Adjustment - COLA/Consumer Price Index - CPI) in costs associated with maintenance.

With this second model, at the end of the expected life cycle, the original endowment fund is preserved.

If the endowment is structured properly, the fund balance could be used as leverage to secure additional funds for the total replacement of the structures and related features. The process begins anew – but with a partial bankroll from this legacy fund.

> "Someone's sitting in the shade today because someone planted a tree a long time ago."
>
> - Warren Buffet

LIFE-CYCLE COST METHOD: >	LIFE CYCLE COST METHOD #1 "SHRINKING SET-ASIDE"	LIFE CYCLE COST METHOD #2 "SET-ASIDE REMAINS INTACT"
INITIAL COST OF NEW PLAYGROUND:	**$50,000**	**$50,000**
LIFE-CYCLE COST FACTORS:	One year's maintenance cost for similar playground ($2,000 in labor and materials) Multiplied by 30% cost increase for accessible playground features (.30) + initial yearly maintenance cost estimate multiplied by # years life expectancy of playground (15/years projected)	If the annual maintenance cost is $2,000, then how much money must be in the bank to earn more than that annually in interest?
THE FORMULAS:	$2,000 * 1.30 = $2,600 * 15/yrs = **$39,000.** Traditional annual cost increases for maintenance labor and materials are **NOT** factored in this equation. This fund is fixed in the year in which the funds were raised and it only increases based on how it is invested; and with the entity controlling and dispersing the funds.	**$67,500** invested @ 4% annual interest yields **$2,700** in total yearly interest. Using only 75% of the earned interest to allow for expected yearly CPI/COLA increases provides **$2,025** ($2,700 * .75 = $2,025) to pay for annual maintenance costs of the new playground.
LIFE CYCLE COSTS TO BE ADDED TO INITIAL CONSTRUCTION COST:	$39,000 (life cycle cost) + $50,000 (the initial cost of the playground) = **$89,000**	$67,500 (life cycle cost) + $50,000 (the initial cost of playground) = **$117,500**
TOTAL COST OF PLAYGROUND *Construction + Life-Cycle Maintenance Costs*	**$89,000** $50,000 for the initial construction of the playground + $39,000 invested as the set-aside to pay for maintenance over the next 15 years.	**$117,500** $50,000 for the initial construction of the playground + $67,500 invested as the set-aside to pay for maintenance over the next 15 years.

Annual labor and materials costs used in this document are for illustration purposes only. Actual costs are unique to each community and to each project. A detailed cost analysis following this EXAMPLE should be prepared for your project by knowledgeable individuals.

A Life Cycle and Maintenance checklist - ask yourself:

Who's responsible for maintenance? Agency:_____

Position: _____

What are the estimated costs of maintenance? Yearly Cost:_____

What are the expected Life cycles of the equipment, site, and surfacing? Equipment:_____ years; Site:_____ years; Surfacing:_____ years

___Are we prepared to pay for the added expense of maintaining this new facility?

___Do we know how to maintain it?

What's the inspection schedule and personnel needed?

Schedule:__ inspections per year; __ personnel needed

___Do we need Certified Playground Safety Inspector (CPSI) training or do we hire outside inspectors?

___Have we arranged for Manufacturer training / upkeep information / maintenance kit?

___Have we created Preventive, Planned, Seasonal, and Reactive maintenance schedules?

___Have we considered whether we might someday want to do upgrades and additions?

___Is this possible given our current design?

___Have we considered the costs and logistics of removing this playground at the end of its useful life?

___Have we factored in the eventual cost of replacement of this playground?

Many ways to create a playground…Here's an affordable option

There are many ways to go about funding, designing, building, and maintaining a playground. In this time of shrinking parks and recreation budgets, one option that should be discussed up front is the "community build" model. Community built playgrounds are constructed using volunteer labor, which can be a huge cost savings to the community. Community built playgrounds can utilize various sources of expert help for the design and construction of the playground. Help can be obtained or purchased from many playground equipment manufacturers, from non-profits, from businesses specializing in playground design and construction, by using local expertise or doing it all in-house. This is a growing trend nationwide with many businesses and non-profits lending their expertise to help make new playgrounds a reality. The community build concept is simple:

- Outside (paid!) expert help from a single source.
- Guidance <u>can</u> be from start to finish from some sources
- Some offer help locating funding
- Several of the entities that use the community build concept emphasize accessibility and/or universal design as a key component of playground design
- This process helps gather public input, uses public participation in all aspects of the playground's creation, and fosters public ownership of the site
    - The community is the builder, which encourages the community to help in the maintenance and upkeep of the playground (community ownership)
    - Community built playgrounds may save as much as one third of the cost of the playground in volunteer labor and donated materials
    - Building the playground brings the community together, and develops greater community spirit

CAVEATS:

- Help from <u>most</u> community build playground non-profits or businesses is NOT FREE
    - Cost varies according to how <u>much</u> they do for you
    - Amount of help/types of help available also varies by company (DO YOUR HOMEWORK BEFORE TAKING THIS ROUTE!)
- Whether the project succeeds or fails still depends on your community

Just a few sources for community build accessible playground help: (in alphabetical order; THESE ARE NOT RECOMMENDATIONS; for information purposes only). Some Playground Equipment Manufacturers may also offer community build options; just ask them.

- Community Built Association
  P.O. Box 115
  Parrott, GA 39877
  (931) 389-9649
  www.communitybuilt.org
  cba@communitybuilt.org

- Indiana Recreation Equipment and Design
  12037 Sandywoods
  Grand Haven, MI 49417
  (616) 842-6483
  Toll Free: (800) 583-6483
  Fax: (616) 842-6486
  www.indianarecreation.net/
  indianarec@charter.net

- KaBoom:
  4455 Connecticut Ave. NW, Suite B100
  Washington, D.C. 20008
  (202) 659-0215
  http://www.kaboom.org/

- Landscape Structures
  601 7th Street South
  Delano, MN 55328-8605
  Toll-Free: (888) 4FUNLSI OR: (763) 972-3391
  Fax: (763) 972-3185
  www.playlsi.com

- Leathers and Associates
  18 Eastlake Road
  Ithaca, NY 14850
  Toll Free: (877) 564-6464
  (607) 277-1650
  Fax: (607) 277-1433
  http://www.leathersassociates.com/
  leathers@leathersassociates.com

- Boundless Playgrounds Inc.
  280 Trumbull St., 23rd Floor
  Hartford, CT 06103
  (860) 243-8315
  Fax: (860) 578-1900
  www.boundlessplaygrounds.org/

- Playworld Systems
  1000 Buffalo Road
  Lewisburg, PA 17837-9795
  Toll Free: 1(800) 233-8404
  Fax: (570) 522-3030
  www.PlayworldSystems.com
  info@PlayworldSystems.com
  © 2008 Playworld Systems®

- Sinclair Recreation, LLC (GameTime Equipment Indiana Rep.)
  P.O. Box 1409
  Holland, MI 49422-1409
  Toll Free: (800) 444-4954
  Fax: (616) 392-8634
  www.gametime.com/
  www.sinclair-rec.com/
  sarah@sinclair-rec.com

What goes into the playground? The design compromise

The first question: Who's going to use it?

One of the main things to consider when planning for your new playground is the children who are going to use it. What kinds of activities and equipment will they want? How many children might want to use the new playground at a time? What is the number of children that the new playground will safely accommodate at one time?

Require all bids from designers and equipment manufacturers to consider "play value" in their playground proposals. "Play Value" is the measure of how fun or absorbing a piece of playground equipment is: the equipment that is most popular and enjoyable to children has the greatest play value. Design the playground for access to kids with physical disabilities, and also for children with different developmental, cognitive, or sensory disabilities as well as for children who do not have a disability. The idea here is to provide fun, exercise, and social interaction for all children in your community, regardless of ability.

Take into account user carrying capacity of equipment and space. Ask the equipment manufacturers about the maximum number of children that can safely use their various products. Design the playground with the potential maximum number of users in mind. Communities change and grow over time; use the US Census projections for the next ten years to predict changes in the number of children and their age demographics in the community.

Direct youth public input should be part of your design compromise. Who can better tell you about what will make your playground popular and successful than the people who will be using it? Ask the kids what they want during the public input process. Separate their responses by age group to better pick out age-appropriate activities and equipment for each separate area of the playground.

The children can help select the playground's colors, styles, and types of equipment and activities.

It's best to separate the playground into areas designed and built for different age ranges of children. Provide age-appropriate playground features and activities in separate areas for better safety, improved user experiences, and developmental challenges. Some age ranges to consider are:

- 0-2? Separate play spaces for babies and their parents are possible, but not often part of many playgrounds
- 2-5
- 5-12
- Teen plus? (not a group often provided for; perhaps an overlooked demographic in your community?)

Consider using colors of equipment, colors of surfacing, placement of equipment, signage, thematic differences, etc. to illustrate and separate the different age-appropriate play sections of the playground. The kids who will use the equipment can help choose the color schemes during the public input, as described above.

Design in a wide variety of age-appropriate activities in each area. Children experience and explore their world through many different types of play experience. Providing a wide variety of activities and features in your playground makes it more appealing, more challenging, and keeps it interesting over time. Consider the many different types of play when choosing your activities and features of the playground (ask the manufacturers which equipment facilitates which type of use/play for which age group). A few examples are:

- Interactive/cooperative play
- Solitary play
- Climbing
- Spinning
- Swinging

- Follow-the-leader

- Balancing

- Sliding

- Views from heights

- Imaginative play

- Creative play

- Noisy play/quiet contemplative play

Design your playground with clear lines of sight for child safety. Parents, caregivers, and family members need to be able to clearly see where their children are at all times, and monitor them.

Another consideration about the parents: If your overall project and maintenance budget can handle it, consider adding some nearby features for the comfort of parents and others that accompany kids to the playground

   o Shade
   o Comfortable seating
   o Water fountains
   o Restrooms

What's next to my proposed playground?

Take into account what's nearby your proposed playground. Building a playground that uses non-unitary surfacing like engineered wood fiber or shredded rubber might not be a good idea if there's a splash-pad or pool next door, as bits of the surfacing material will tend to find their way into the pool and its filters. The same goes for placing your playground too closely to busy ball fields. Stray baseballs, basketballs or soccer balls flying into the playground can be a safety concern. Leaving sufficient space for 'buffer zones' between various uses in your park prevents these issues.

How big does the entire playground need to be?

The size necessary for your playground will depend on a number of factors:

- Limited space = limited amount of equipment;
  - Very careful design is needed when the space available for the playground is limited in size

- More modular activities in the playground means more space is needed

  - Add up the 'footprint' area needed (each manufacturer can provide specifications for their individual products) for each piece of equipment plus space to separate the different age-appropriate areas to determine the rough size of the entire playground

Safe equipment spacing guidelines within playgrounds

Your playground will require space around each and every piece of equipment for safety, to prevent user conflicts, improve accessibility, and ease maintenance. The amount of space depends on the type of equipment. Both the Consumer Product Safety Commission (CPSC) and the American Society for Testing and Materials (ASTM) publish guidelines that specify the space needed around pieces of playground equipment. The following documents apply to this spacing:

- CPSC document No. 325, Handbook for Public Playground Safety: http://www.cpsc.gov/cpscpub/pubs/325.pdf
- ASTM F1487, Specification for play equipment for children 2-12 years: http://www.astm.org/Standards/F1487.htm
- ASTM F2373, Specification for play equipment for children 6 months through 23 months: http://www.astm.org/Standards/F2373.htm

Accessible Routes within the park and the playground

How do we reach the new playground area from the rest of the park? Providing accessible playground equipment without providing accessible routes to reach it

makes the equipment inaccessible. It's best to provide multiple points of access to your new accessible playground to reduce pedestrian congestion and conflicts. Multiple accessible routes also allow users or parents with disabilities to approach the play site from more than one direction within the park and the playground.

Don't forget to provide connecting accessible routes to other accessible features, especially nearby accessible site necessities such as:

- Restroom facilities
- Parking
- Shade/seating for adults supervising children using the playground.
- Other park facilities and amenities (Such as pools, sports fields, etc.)

Accessible Surfaces

There is a great deal of information out there about playground safety surfacing and accessibility. Be sure to ask suppliers about the details of required safety surface underlayment, drainage, and special preparation/installation of the surface; these vary significantly depending on the type of surface used. Proper underlayment, drainage, installation, and maintenance of accessible safety surfaces are key to their actually providing proper access and fall protection to users.   Accessible play area surfacing must be slip-resistant, firm and stable, allow children to approach and enter the playground safely, and attenuate the impact from falls. Accessible play area surfaces only retain their accessibility if they are well-maintained; this is especially true of engineered wood fiber or shredded rubber. Plan for the costs associated with maintaining your play area surfacing from the very beginning, including staff time, equipment, materials, and education.

NOTE: Be aware that Cement, Asphalt, Soil, Grass, Pea Gravel and Sand are NOT accessible safety surfacing, and do **not** meet ADA requirements.

Some applicable accessible playground surfacing information:

- o Playground accessible surfacing: ASTM F1951 :
  http://www.astm.org/Standards/F1951.htm

- o Broad-spectrum playground safety guidelines including surfacing:
  CPSC Document #325: http://www.cpsc.gov/cpscpub/pubs/325.pdf

- o U.S. Forest Service research on stabilized engineered wood fiber
  playground surfaces: http://www.access-board.gov/research/play-surfaces/report-surfaces.pdf

- o Here's a USFS Frequently Asked Questions webpage for stabilized
  engineered wood fiber: http://www.fpl.fs.fed.us/resources-products/research-highlights/playground_materials/playground_materials-faqs.html

- o Here's "KaBoom"'s website with information about playground
  safety surfacing and accessibility:
  http://projects.kaboom.org/UniversalDesign/Surfacing/tabid/20558/Default.aspx

The table on the next page compares several of the more common types of
safety surfacing, and their advantages and disadvantages. Information in the
table is cited fully in the citation section at the end of this document.

IDNR Division of Outdoor Recreation – Accessible Playground Toolkit

Table of the most common types of ADA-compliant accessible safety surfacing:

Type of Accessible Safety Surfacing:	Some Advantages	Some Disadvantages
Poured-In-Place Rubber	Long-lasting, takes high traffic well, can be UV resistant, need less maintenance, trash can't mix into the product, easy to clean	Most expensive initial installation, Must be installed over hard surface. Repairs possible but maintenance staff need training on methods
Rubber Tile or Mats	Long-lasting, takes high traffic well, can be UV resistant, need less maintenance, Can be replaced in pieces if damaged	Expensive initial installation, must be installed over a cushioned underlayment, edges can 'pop up'/curl
Accessible Artificial Turf Grass	Long-lasting, takes high traffic well, can be UV resistant, Needs less maintenance, Easier installation	Expensive initial installation, may not absorb falls as effectively as poured-in-place; may require cushioned underlayment
Stabilized Engineered Wood Fiber	Less expensive. Longer lasting and less maintenance than plain engineered wood fiber, Can be installed by volunteers	Durability of types of stabilization 'binders' varies; check with manufacturer for details and specifications. Less durable than true unitary surfaces.
Stabilized Shredded Rubber	Less expensive. Stabilized shredded rubber stays in place better than non-unitary materials, Can be installed by volunteers	Durability of types of stabilization 'binders' varies; check with manufacturer for details and specifications. Less durable than true unitary surfaces.
Engineered Wood Fiber	Least expensive surfacing option. Can be ADA compliant if installed deep, even, and is maintained. Can be installed by volunteers	Products need to be spread evenly and deep to provide best fall protection; Need to be raked/replenished weekly (potential high labor/material expense over time); will become inaccessible if not carefully maintained

(Table is adapted from the 2008 Consumer Product Safety Commission Public Playground Safety Handbook, and uses additional data from the USFS Forest Products Laboratory, the National Recreation and Park Association, and ADAAG. See the citation section of this document for full citations.)

Types and designs of equipment

A few considerations about playground equipment:

- Select equipment from manufacturers that specialize in accessible and/or universally designed equipment/activities
- Consider activities at all heights of the play area; build-in access to all heights/activities if at all possible
- Providing a mix of accessible composite play structures with several kinds of freestanding equipment items provides many opportunities for play for kids of all abilities
- Consider adding activities/equipment that provide challenges and potential for learning, interaction and growth at each age level
- Lay out the playground to segregate the equipment designed for different age groups; cluster the equipment for each age group together in an easily distinguished pattern/set of colors
- How does the play value of the equipment relate to its cost? (How much fun is the expensive item versus the inexpensive one? Ask some kids!)
- What is the warranty available?
- What about parts, warranty repair or service after the sale?

Equipment types:

Composite Structure (Made up of Elevated Play Components)
  - Connects elevated play components to many kinds of play activities like slides, climbing equipment, social and imaginative play activities (These are the large, complicated-looking playground equipment structures that are more commonly seen in newer parks)
  - The elevated play components that are part of these structures are entered from above ground level
  - Access to these structures can be made by ramps, raised landscaping with an accessible route on it, or transfer platforms

- o Remember that transfer platforms require a child that uses a mobility device like a walker or wheelchair to abandon their device on the ground, and is a less than ideal access option; providing more access options other than transfer platforms greatly increases access to composite structures

Freestanding Activities (Ground-level Play Components)

These are smaller play activities that are entered from ground level, and includes items such as:

- Swings
- Climbers
- Spinning devices
- Imagination-based panels
- Play houses/objects
- Sand or water tables/boxes
- Spring rockers
- Interactive panels/games

NOTE: There are some very ingenious designs for game and interactive panels that can be installed as part of either a composite or freestanding activity. Check with several manufacturers, and examine the variety available. Some of these panels make noises, vibrate, allow kids to make music, play games, spur imagination, and otherwise increase play value and children's interaction on the playground whether on a high or low activity. These panels or devices do not have to cost a great deal more than ordinary equipment, but provide a great deal more fun for everybody.

Where do we put the playground? Site choice and design

Choosing which park location to put your playground in, and where in the park to locate your playground is not an easy decision. Here are some questions to ask yourself:

- o Where's the <u>best</u> place to locate this park?
- o Is there bike/pedestrian access to the park?
- o Is there adequate bicycle/automotive parking nearby?
    - ▪ Is there adequate <u>accessible</u> parking nearby? What about accessible van parking?
- o Is it close to the center of a residential portion of the community?
- o Are restrooms, shade, seating and water available?
    - ▪ Is the park site chosen for the playground big or developed enough to already have these features?
    - ▪ Is it practical or affordable to provide them as part of this project? If they aren't in the budget now, will the logistics of the site allow them to be added later?
    - ▪ Are these features also accessible, or can they be made accessible?
- o Are there significant barriers to user access? (How do users get there?) Significant barriers to users (especially users with disabilities) include:
    - ▪ Unpaved/gravel/rough roads/entrances/parking
    - ▪ Busy intersections nearby
    - ▪ Busy/high-speed streets or highways between park and residences
    - ▪ Steep grades or side slopes on hills
    - ▪ Do users have to travel long distances to get there?
    - ▪ Availability of public transportation and stops nearby
    - ▪ Accessible routes within and around the park the playground is located in

Some criteria to help choose an ideal site for your new playground:
- Well-drained, upslope area out of flood plain if possible with gradual slopes and grades around it
- Stable, buildable soils underneath
- Gently rolling terrain can actually be 'designed in' to work with equipment placement/access points
    - Tucking the playground in next to a small rolling hill may allow you to use the landscape to provide an accessible route straight to the top levels of a composite play structure without installation of a stand-alone ramp
- Near restrooms, water fountains, shade, seating, not far from parking, with accessible routes connecting all facilities
- Far enough away from pools, splash pads and water features to prevent incidental transfer of loose safety surfacing materials into the water

Who's going to actually design the site?
- Professional design will probably be your best option in the long run: consider manufacturers, retailers, landscape architects, etc. for sources. Your designers (no matter who they are) will need to incorporate the following legal and safety regulations and guidelines as they design your playground:
    - ASTM
    - ADA; especially the Guidelines for Outdoor Developed Areas
    - CPSC; especially the Public Playground Safety Handbook
    - Universal design is highly recommended as a best design practice

Installation of your new playground

It is strongly suggested that you have multiple (spare) copies of professional design/blueprints/detailed instructions in hand when you begin. Bad things

accidentally happen to blueprints on job sites, spares will save you having to stop and reorder new ones.

Who's going to install it? You'll have to decide whether to use:

- Volunteers
- Professionals/manufacturers
- Park Staff
- All of the above?

Who provides direction/expertise to direct installation? Somebody has to be the leader of this project.

- Professionals?
- Manufacturers?
- Trained Park Staff?

Logistics is critical to the success of your construction phase. Here are a few suggestions to make this task easier:

o Order all materials/equipment well in advance
o Arrange for the materials delivery date, time, location, and unloading
o When to build? Pick a time of year during which the weather will work for you, not against you. September/October, or March/April can be less rainy in Indiana, and not be too hot or too cold to work
o Arrange for all specialized equipment/tools needed
o Decide who will provide training for volunteers/staff. Decide who will provide insurance for workers during the build
o Designate someone to be in charge of site safety. Your insurance underwriter may have specific requirements for this
o Provide for volunteer necessities: restrooms, water, food, safety/protective gear, tools, etc.

What might my playground cost? (A real-world example)

Source: Ft. Wayne Parks and Recreation; 2008 (Used by Permission)

PARK LOCATION	EQUIPMENT	SITE WORK	SURFACING	TOTAL:
BOONE	22,041	6,375	39,000	67,416
BRACKENRIDGE	22,956	5,000	29,000	56,956
EASTSIDE	22,956	5,000	29,000	56,956
MOODY	27,074	6,400	39,000	72,474
GREN	22,662	5,500	32,000	60,162
GRAND TOTALS	**117,689**	**28,275**	**168,000**	**313,964**
AVERAGES:	23,538	5,655	33,600	62,793
% OF TOTAL:	37%	9%	54%	100%

COMMENTS:
AVG SITE WORK SHOWN IS 24% OF THE COST OF THE EQUIPMENT
AVG SURFACING SHOWN IS 142% OF THE COST OF THE EQUIPMENT

Short "TOP TEN To Do" List for your Playground; in chronological order:

1. Get public feedback, preferences and support
2. Figure out the budget limitations and how to pay for it (both installation and long-term maintenance)
3. Determine the site needs
4. Pick the site based on the advantages and limitations of each potential location
5. Pick equipment and design site
6. Build it (and celebrate its completion!)
7. Use it
8. Maintain it
9. Examine use over time and eventually get new public feedback to determine needs for expansion, upgrades or design changes
10. Be prepared to remove and replace it at the end of its life cycle

Appendices: Citations and Resource Information

Citations and Resource List: IDNR Accessible Playgrounds Idea Sheet

Ambrosini, K., Farr, M. (2005). Making Outdoor Programs Accessible.
    Published by the Mohonk Nature Preserve; New Paltz, NY.
    www.mohonkpreserve.org/

Arnold, R., Byanski, J. (2008). Endowments and Life Cycle Costing.
    Unpublished paper. Excerpts used by permission of authors.

Assistive Technology Partners. (n.d.). Playground Accessibility – ADA
    Compliance. University of Colorado - Denver, Dept. of Physical Medicine
    and Rehabilitation and Health Sciences Center, Denver, CO.

Bhattacharya, S., Cummings, H., Et. Al. (2003). Universal Playgrounds:
    Integrating All Children Through Play. Extensive Research Thesis created
    through the Gemstone Program at the University of Maryland. Retrieved
    from: http://www.gemstone.umd.edu/teams/documents/playgrounds.pdf

Beneficial Designs, Inc. (2008). The Universal Trail Assessment Process
    (UTAP). Beneficial Designs, Minden, NV. Retrieved from:
    http://www.beneficialdesigns.com/trails/utap.html

Big Toys Green Playground Solutions. (2008). BigToys Accessible Playground
    Equipment. Accessible, Equivalent Facilitation, and Universally Designed
    playground equipment, planning, design, and assistance. Retrieved from:
    http://www.bigtoys.com/accessibility_ada.php

Burkhour, C. (2005). Fun and Leisure: Playgrounds for All – Introduction to
    Playgrounds. National Center on Physical Activity and Disability;
    University of Illinois – Chicago, Dept. of Disability and Human
    Development, College of Applied Health Sciences: Chicago, IL

Center for Universal Design (1997). The Principles of Universal Design, Version
    2.0. North Carolina State University, Raleigh, NC. Christiansen, M. and
    Vogelsong, H. (1996). Play It Safe: An anthology of   playground safety.
    National Recreation and Park Association, Ashburn,   VA.

Disability and Business Technical Assistance Center (DBTAC) – Great Lakes
    ADA Center (2008). Publications Resource List. University of Illinois at

Chicago Dept. of Disability and Human Development; Chicago, IL.
Retrieved from: http://www.adagreatlakes.org/

Eager, D. (2007). Integrated Life-Cycle Management Applied to Playgrounds.
Proceedings of the Royal Society for the Prevention of Accidents 2007
Playground Safety Conference, Loughborough University, Leicestershire,
UK.

Frost, J., Brown, P., Et. Al., (2004). The developmental benefits of playgrounds.
Association for Childhood Education International: Olney, MD.

Illinois Dept. of Natural Resources. (2006). A Guide to Playground Planning.
Joint publication of the Illinois Park and Recreation Association and the
Illinois DNR Park and Natural Resource Management Section; Carol
Stream, IL.

KaBoom! (n.d.). KaBoom! Community Built Playgrounds. Organization based in
Washington, DC. Retrieved from:
http://kaboom.org/tabid/831/Default.aspx

Landscape Structures. (2009). Accessibility: Playgrounds where everyone feels
included. Webpage with links, information, and assistance with planning
and design. Retrieved from:
http://www.playlsi.com/Planning/Accessibility/Accessibility.htm

Laufenberg, T. (2004). Improving Playground Surface Accessibility. From
Today's Playground Magazine, May, 2004. Retrieved from:
www.todaysplayground.com

Laufenberg, T., Winandy, J. (2004). Stabilized Engineered Wood Fiber for
Accessible Playground Surfaces – Installation and Serviceability Results:
Governor Nelson State Park, Wisconsin. USDA-Forest Service General
Technical Report; FPL-GTR-154. Forest Products Laboratory, Madison,
WI.

Lauredhel. (2008). Playground Accessibility for Parents with Disabilities. First-
person experience blog post about lack of parental access to playgrounds.
Retrieved from: http://viv.id.au/blog/?p=1839

Leathers and Associates. (2007). Community Built Playgrounds: Community built builds community! Retrieved from: http://www.leathersassociates.com/

Malkusak, T. (2002). Turning Accessible Playgrounds Into Fully Accessible Playgrounds: Just add a little essence. Parks and Recreation Magazine, April 2002; published by the National Recreation and Parks Association, Ashburn, VA.

Miller, K., and Schleien, S. (2006). A Community for All Children: A guide to inclusion for out-of-school time. Dept. of Recreation, Parks and Tourism; University of North Carolina – Greensboro; Greensboro, NC.

Moore, G., Lane, C., Hill, A., Cohen, U. (1994). Recommendations for Child Care Centers – 3rd. Edition. Research Report R792; Center for Architecture and Urban Planning Research, University of Wisconsin - Milwaukee; Milwaukee, WI.

National Center on Accessibility. (2003). Access to Play Areas. National Center on Accessibility; Indiana University – Bloomington: Bloomington, IN

National Center on Accessibility. (2008). Best Practices of Accessibility in Parks and Recreation: A Delphi Survey of National Experts in Accessibility. National Center on Accessibility; Indiana University – Bloomington: Bloomington, IN

National Center for Boundless Playgrounds. (2007). Boundless Playgrounds – Fun for All Facts. Retrieved from: http://www.boundlessplaygrounds.org/playgrounds/tour/documents/FunForAllFacts.pdf

National Center on Physical Activity and Disability. (2005). Introduction to Designing Accessible Play Areas. Fact Sheet published by the NCPAD at the University of Illinois – Chicago, Department of Disability and Human Development, College of Applied Health Sciences, Chicago, IL. Retrieved from: http://www.ncpad.org/fun/fact_sheet.php?sheet=81

National Program for Playground Safety. (2006). America's Playgrounds – Safety Report Card; Playground Safety Checklist. NPPS; University of

Northern Iowa; School of Health, Physical Education, and Leisure Sciences, Cedar Falls, IA.

National Recreation and Park Assocation. (2009). List of Park and Recreation Suppliers providing Accesssible Playground Equipment. Webpage with Links. NRPA, Ashburn, VA. Retrieved from: http://nrpasupplychain.com/results.php?search_option=phrase&term=playground+accessibility&search_type=keyword

North Carolina Rated License Assessment Project. (2007). NCRLAP's Requirements for Gross Motor Play Space and Equipment. NCRLAP summary of scoring criteria for play equipment spacing. Retrieved from: http://web.uncg.edu/ncrlap/ncrlapMember/Public/Final%2010-07%20NCRLAPs%20Requirements%20for%20Gross%20Motor%20Space%20and%20Equipment.pdf

Northern Arizona University – PRM326 Online Course. (1998). Inclusive Recreation: Employ Principles of Universal Design: Online Lesson. Webcourse materials and lesson. Retrieved from: http://www.prm.nau.edu/PRM326/employ_universal_design_lesson.htm

Play&Park Structures. (2005). Beyond Accessibility: Certified Boundless Playgrounds. Webpage with links, planning, design help. Retrieved from: http://www.playandpark.com/accessibility.iml

Playworld Systems. (2005). Accessibility Guidelines for Public Playgrounds Worksheet. ADAAG accessibility requirements calculator. Retrieved from: http://www.playworldsystems.com/pw%20adachecklist.pdf

Playworld Systems. (2007). Playground Planning: ADA Product Design. Webpage with links. Retrieved from: http://www.playdesigns.com/pw/ada3.asp

Riley Children's Hospital. (2007). Accessible Playground Resources. Riley Children's Hospital, Indianapolis, IN. Retrieved from: http://rileychildrenshospital.com/resources/documents/Playground%20Resources%20master.pdf

Ruth, L. (2008). Playground Design and Equipment. National Institute of Building Sciences; Whole Building Design Guide. Retrieved from: http://www.wbdg.org/resources/playground.php

Self-Insured Schools of California. (n.d.). ADA Accessibility Guidelines for Playgrounds: An Overview. Self-published manual. Retrieved from: http://wwwstatic.kern.org/gems/siscsafetyAndLossC/PlaygroundAccessibilityOverv.pdf

Sinclair Recreation. (n.d.). Planning a Playground: 5 Steps to Building a Safe, Long-Lasting Play Environment. Retrieved from: http://www.sinclair-rec.com/images/planning.pdf

Skulski, J. (2007). Designing for Inclusive Play: Applying the Principles of Universal Design to the Playground. National Center on Accessibility; Indiana University – Bloomington: Bloomington, IN.

Snider and Associates. (2008). Inclusive Play: Universal Design Playground Checklist. Snider and Assoc., Inc; North Royalton, OH. Retrieved from: http://www.cvsnider.com/sites/cvsnider/webcontent/UniversalDesign/PPS_IP_Activity%20Grids_wCopyRight.pdf

Snider and Associates. (2008). Inclusive Play: 7 Principles and benefits of Universal Design in Playgrounds. Snider and Assoc., Inc.; North Royalton, OH. Retrieved from: http://www.cvsnider.com/Default.asp?page=145

Spencer, A. (2003). Accessibility and your playground: A profile of facilities taking action. Article in Park and Recreation Magazine, April, 2003, National Recreation and Park Association, Ashburn, VA. Retrieved from: http://findarticles.com/p/articles/mi_m1145/is_4_38/ai_100960610

Stratton, P. (2008). Assessment Tools for Accessibility. National Institute of building Sciences; Whole Building Design Guide. Retrieved from: http://www.wbdg.org/resources/assesstools.php

Stoecklin, V. (1999). Designing for all children. Online publication: White Hutchinson Leisure and Learning Group, Kansas City, MO. Retrieved from: http://www.whitehutchinson.com/children/articles/designforall.shtml

U.S. Architectural and Transportation Barriers Compliance Board. (1995). The
    Americans with Disabilities Act Checklist for Readily Achievable Barrier
    Removal. Federal Register Publication; Washington DC. Retrieved from:
    http://www.ada.gov/racheck.pdf

U.S. Architectural and Transportation Barriers Compliance Board. (2000). ADA
    Accessibility Guidelines for Buildings and Facilities: Play Areas; Final
    Rule. 36 CFR Part 1191. Federal Register Publication; Washington DC.

U.S. Architectural and Transportation Barriers Compliance Board. (2005).
    Accessible Play Areas: A Summary of Accessibility Guidelines for Play
    Areas. [Guide to the Guidelines] U.S. Access Board; Washington, DC.

U.S. Census Bureau. (2005). Disability and American Families: 2000.
    Washington, DC: U.S. Census Bureau. Retrieved from:
    http://www.census.gov/prod/2005pubs/censr-23.pdf

U.S. Consumer Product Safety Commission. (2008). Handbook for Playground
    Safety. CPSC Publication #325; Bethesda, MD.

U.S. Dept. of Justice. (2000). ADA Guide for Small Towns; a guide for small
    local governments including towns, townships, and rural communities.
    U.S. D.O.J.; Civil Right Division; Disability Rights Section; Washington,
    DC.

U.S. Dept. of Justice. (2009). Americans with Disabilities Act: ADA Home Page.
    Webpage with extensive links. Retrieved from: http://www.ada.gov/

U.S. Dept. of Agriculture – Forest Service. (n.d.). Frequently Asked Questions:
    Stabilized Engineered Wood Fiber for Playground Surfaces. USDA-FS
    Forest Products Laboratory, Madison, WI.

U.S. Dept. of Agriculture – Forest Service. (2005). Research Summary:
    Engineered Wood Fiber Surfaces Improve Accessibility for Americans with
    Disabilities. Technical Publication PDF-292; USDA-FS Forest Products
    Laboratory, Madison, WI.

U.S. Dept. of Agriculture – Forest Service. (2006). Forest Service Outdoor Recreation Accessibility Guidelines; FOSRAG. USDA-FS Technical Manual FOSRAG; Washington DC.

U.S. Dept. of Agriculture – Forest Service. (2006). Forest Service Trail Accessibility Guidelines; FSTAG. USDA-FS Technical Manual FSTAG; Washington DC.

Appendices: Glossary of Accessibility Terms

Glossary of Terms for the IDNR Accessible Playground Toolkit
(terms taken from ADAAG, Advisory 106.5 of the ADA/ABA, the CPSC Public Playground Safety Handbook, and the IPRA/NRPA/US Access Board's "Accessibility Guidelines for Play Areas" Course)

ABA: Architectural Barrier Act of 1968 (as Amended); the first Federal law created to ensure access by persons with disabilities to all facilities that were designed, built, altered, or leased using Federal funds. (http://www.access-board.gov/ada-aba/final.pdf)

Access Board: Originally known as the "Architectural and Transportation Barriers Compliance Board"; created by Section 502 of the Rehabilitation Act of 1973. The Board is: "…an independent Federal agency devoted to accessibility for people with disabilities…the Board is now a leading source of information on accessible design." (http://www.access-board.gov/about.htm)

Accessible Route: An accessible route is a pathway with a firm and stable surface that connects accessible amenities such as passenger loading zones, parking areas, public streets and sidewalks, and accessible features of a public site (such as features within a park). The accessible route must coincide "to the maximum extent feasible" with the route for the general public. ADAAG creates minimum standards for accessible routes, which can be found in Section 4.3. (http://www.access-board.gov/adaag/html/adaag.htm#4.3)

ADA: Americans with Disabilities Act of 1990 (as Amended); Title II and III of this law extends the rights of people with disabilities into state and local governments in addition to the private sector. It guarantees equal opportunities, full community participation, and access to employment, transportation, private agencies, government agencies, and telecommunications. ADA applies even if a facility or

program <u>does not</u> receive federal funds. (http://www.access-board.gov/ada-aba/final.pdf)

ADAAG: ADA Accessibility Guidelines (1991, as amended through 2002). (http://www.access-board.gov/adaag/ADAAG.pdf)

Alteration: Actions that affect or could affect the usability of the play area. This does not include most normal maintenance activities such replacing worn or damaged equipment parts. Adding new engineered wood surfacing could be considered an alteration if the usability of the playground was affected by the new surface not being firm and stable enough for accessibility.

ASTM: American Society for Testing and Materials; ASTM is an internationally recognized organization that develops voluntary standards for materials, products, systems and services. ASTM has created voluntary measurement standards that apply to several aspects of playground safety and accessibility. (http://www.astm.org/)

Children's Use: Describes spaces and elements specifically designed for use primarily by people 12 years old and younger.

Circulation Path: An exterior or interior way of passage provided for pedestrian travel, including but not limited to, walks, hallways, courtyards, elevators, platform lifts, ramps, stairways, and landings.

Clear Width: Measurement of unobstructed side-to-side distance on a pathway, accessible route, ramp, or other route of travel. Clear width must be 60 inches minimum on an accessible route unless the play area is less than 1000 square feet in area; then the ground accessible route must be 44 inches wide minimum.

Critical Fall Height: The purely theoretical height from which a 'person' can fall onto a given playground surface and not experience death or significant injury. This is measured under laboratory conditions, and is one of the many specifications provided by playground surfacing manufacturers.

Cross Slope: The slope that is perpendicular to the direction of travel. The maximum allowable cross slope on a ground level accessible route is 1:48. SEE RUNNING SLOPE

Element: An architectural or mechanical component of a building, facility, space, site (or play area).

Elevated Play Component: A play component that is approached above or below grade and that is part of a composite play structure consisting of two or more play components attached or functionally linked to create an integrated unit providing more than one play activity.

Equivalent Facilitation: Defined under ADAAG, this allows playground designers/builders to innovate new accessible features in ways not mentioned in the guidelines if: "…the alternative designs and technologies used will provide substantially equivalent or greater access to and usability of the facility."

Facility: All or any portion of buildings, structures, site improvements, elements, and pedestrian routes or vehicular ways located on a site.

Ground Level Play Component: A play component that is approached <u>and</u> exited at the ground level.

Impact Attenuation: This is the ability of a playground surface to absorb the energy of a falling object; for prevention or mitigation of fall injuries. See ASTM 1951-99 for specifications for play surfaces.

Maneuvering Space: This is the space required for a wheelchair to make a 180-degree turn. At least one maneuvering/turning space must be provided on the same level as elevated play components. SEE TURNING SPACE

Manipulative Features: Features on an element or piece of play equipment that allow a child to interact with or manipulate some aspect of the feature. Some common examples are features such as: steering wheels; play panels that make noise, vibrate, light up, or make musical notes; periscopes; speaking tubes; and educational or game boards with letters, numbers, tic-tac-toe, or other learning aids.

NPSI: National Playground Safety Institute; a training program created by the National Recreation and Parks Association to provide training and certification in playground safety and inspection methods.

Openings in Flooring: Openings (otherwise known as gaps) in floor or ground surfaces shall not allow passage of a sphere more than ½" diameter. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

Openings in Railings and Play Equipment: Openings (otherwise known as gaps) in railings and play equipment shall be larger than 3.5 inches and less than 9 inches to eliminate the possibility of entrapment.

Path of Travel: Another name for an accessible route; the main routes of travel for users between facilities or activity areas of a site.

Play Area: An area that contains equipment or play components designed and constructed for children.

Play Component: A piece of equipment or element designed to generate specific opportunities for play, socialization, and learning. Play components can be manufactured or natural, stand alone or a part of a larger composite play structure. Benches or seating are not play components.

Play Types: Identified by the experience the play component generally is designed to provide, such as: climbing, spinning, rocking, swinging, sliding, following, etc.

Play Value: Fun and engrossing objects, elements, and activities have play value. Play value can be defined as the intrinsic value of a plaything to a child. A successful playground results in very high play value for the largest majority of children who use it.

Primary Function Area: Portion of a site whose use is the primary function for the site as a whole. In other words, if a small park's main feature is an enclosed dog run area, then the dog run is the 'primary function' area. When altering a primary function area, the area altered must be in compliance with ADA, and there must be an accessible path of travel to the altered area. SEE ALTERATION

Public Use: Interior or exterior rooms, spaces, or elements that are made available to the public. Public Use may be provided at a building or facility that is privately or publicly owned.

Public Way: Any street, alley or other parcel of land open to the outside air leading to a public street, which has been deeded, dedicated, or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than 10 feet.

Ramp: A walking surface that has a running slope no steeper than 1:12 MAXIMUM. Ramp clear widths are supposed to be a minimum of 36 inches; exceed both slope and clear width whenever possible.

Reach Ranges: This is the distance that a person can reach who is short in stature or while seated in a wheelchair (high, low, forward, and side reach). ADA/ABA provides recommended specifications for locating manipulative features on play components within the reach of individuals using mobility devices.

Readily Achievable Barrier Removal: This portion of Title II of the ADA requires local governments to remove architectural and communications barriers in public areas of <u>existing</u> facilities, <u>even if they are not being altered or built new</u>. According to the ADA, they: "…must be removed in public areas of existing facilities when their removal is readily achievable – in other words, easily accomplished and able to be carried out without much difficulty or expense." For more information, see the Federal "ADA Checklist for Readily Achievable Barrier Removal". (http://www.ada.gov/racheck.pdf)

Rehabilitation Act of 1973: This Federal law extends access beyond architecture, to include programs and employment. It states: "…no individual can be excluded from the participation in, be denied benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance, or under any program or activity conducted by an Executive Agency." Section 504 is the portion of the law most pertinent to outdoor recreation.

Rise/Run: This is the measurement of the slope angle of a ramp. The rise is the amount of vertical distance the inclined or slanted surface ascends or descends (in other words, how much higher above the ground you are at the end of the ramp than when you first stepped on the ramp). The run is the actual horizontal distance measured along the ground from the beginning point of the slope to a line drawn straight down from the highest point of the slope. 1:12 is the maximum allowable slope on elevated accessible routes. Where space allows use a lesser grade. All elevated access routes must also have handrails.

Running Slope: The slope that is parallel to the direction of travel. The maximum allowable running slope on ground-level accessible routes is 1:16. SEE CROSS SLOPE.

Section 504: This is a section of the Rehabilitation Act of 1973. SEE REHABILITATION ACT.

Site: A parcel of land bounded by a property line or a designated portion of a public right of way.

Tactile: An object that can be perceived using the sense of touch.

Technically Infeasible: With respect to an alteration of a building or a facility, something that has little likelihood of being accomplished because existing structural conditions would require removing or altering a load-bearing member that is an essential part of the structural frame; or because other existing physical or site constraints prohibit modification or addition of elements, spaces, or features that are in full and strict compliance with the minimum requirements.

Transfer Device/Transfer System: Equipment designed to facilitate the transfer of a person from a wheelchair or other mobility aid to and from an amusement ride or play element/component seat. Primarily composed of a transfer platform, transfer steps, transfer supports, and clear floor or ground space.

Turning Space: This is the space required for a wheelchair to make a 180-degree turn. At least one maneuvering/turning space must be provided on the same level as elevated play components.   SEE MANEUVERING SPACE

Use Zone: Ground level area beneath and immediately adjacent to a play structure or piece of equipment that is designated for unrestricted circulation around the equipment. Users would either fall and land or exit the equipment on the surface of the use zone. Another term for this is 'buffer area'.

Vehicular Way: A route provided for vehicular traffic, such as in a street, driveway, or parking facility.

Vertical Clearance: Measured height from ground level to the lowest obstruction. Most commonly used to specify minimum overhead clearance distances for ground level accessible routes. 80 inches is the ground level route minimum vertical clearance.

Walk: An exterior prepared surface for pedestrian use, including pedestrian areas such as plazas and courts.

Wheelchair Space: Space for a single wheelchair and its occupant.